



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : C07C 211/63, C11D 3/30, A01N 33/12	A1	(11) International Publication Number: WO 98/35933 (43) International Publication Date: 20 August 1998 (20.08.98)
(21) International Application Number: PCT/GR98/00004 (22) International Filing Date: 10 February 1998 (10.02.98) (30) Priority Data: 970100054 14 February 1997 (14.02.97) GR (71)(72) Applicant and Inventor: VENETSIANOS, Timoleon [GR/GR]; 36 P. Mela Street, GR-143 42 Nea Filadelfia (GR). (74) Agent: PSALTIRAS, Gregory; 6, Lascareos Street, GR-163 43 Ilioupolis (GR).		(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: NEW POLYDYNAMIC CHEMICAL COMPOSITION OF MULTIPLE APPLICATIONS AND METHOD OF PREPARATION THEREOF		
(57) Abstract <p>Method of a chemical composition, which consists of quaternary ammonium salts benzyl - dimethyl - dodecyl (lauryl) ammonium chloride and benzyl - dimethyl tetradecyl (myristyl) ammonium chloride in a content of 5 % by weight totally, as well as on alcohols in a content of 2 % by weight totally, aromatizators in a content of 2 % by weight totally and deionized water in a content of 91 % by weight, which is used in a wide field of applications, such as disinfectant and cleansing means and as a synergistic material in industrial processings and in the agriculture.</p>		

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NEW POLYDYNAMIC CHEMICAL COMPOSITION OF MULTIPLE APPLICATIONS AND METHOD OF PREPARATION THEREOF

The present invention refers to a novel polydynamic chemical composition and to the method of preparation thereof, composed by benzyl - dimethyl - dodecyl (lauryl) ammonium chloride and benzyl - dimethyl tetradecyl (myristyl) ammonium chloride and other chemical substances or compounds, which composition is used in a wide field of applications, such as disinfectant and cleansing means of general use, as a means of water purification, as an augmentative of plant growth, as a synergistic material in fabric dyeing methods and procedures, as a synergistic material in insecticidal means, as a synergistic material in the biological purification of water and of the atmospheric air, as an antifrictional material, as an antistatic means, as an infiltration means because of its penetration ability as well as in various other applications.

As it is known until today, similar chemical compounds are commercially available for various use of cleansing, disinfection, plant growth e.t.c., which, on the other hand present several problems and disadvantages, such as, that, either a large amount of active substance is necessary, resulting in certain side effects and harmful influences that finally make the product ineffective, or a long duration is needed for it to act or due to its incompatibility with other compositions the product and its method of use become expensive and non-profitable.

The proposed composition and its method of use, which consists of compounds such as quaternary salts, as above, converts the conventional production methods into methods of high technology, because of the composition, which, thanks to its mechanical, chemical and electrostatic properties has excellent results to all the fields of its application in an easy, complete and not all expensive way.

The new composition of the present invention presents the following advantages with regard to the prior art compounds of similar applications:

- A wide range of applications both in the field of industrial production and in the level of its use as a final product in a plurality of fields.
- Excellent and quick efficiency.

- Relatively low content of the active substance, a fact that reduces substantially the cost of production and eliminates the disadvantages and the side effects that are usually due to the high content of the active substance.
- 5 - A composition of cationic character, that, on the other hand, presents tolerance (is compatible) to non-ionic or anionic compositions, resulting in the improved efficiency and the elimination, substantially, of the incompatibility with other materials and compounds of anionic character, which it comes in contact with.
- 10 - Increased bonding (linking) ability of the used materials and improved activation of the material to be elaborated.
- Improved and suitable surfactant possibility of the used materials.
- Low toxicity with excellent possible efficiency.
- Increased strength resulting to the increase of the duration of the active time of the product.
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The content of the active substance in the new polydynamic composition amounts to 5% by weight of the salts in the water of 91% content by weight and 4% by weight of the materials, which include alcohols of 2% by weight, aromatizers and complex compounds of non-ionic character of a total content 2% by weight.

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Method of preparation : Quaternary salts are received, i.e. benzyl - dimethyl - dodecyl (lauryl) ammonium chloride and benzyl - dimethyl (myristyl) ammonium chloride in a quantity of 5% by weight and they are heated in a high and stable temperature, i.e. 70 °C for 6 hours in a water-bath. Following this, the mixture is put into deionized water of 91% content by weight of the total mixture which is enriched with metals, substantially with iron, in stable temperature of 55 °C. A light stirring follows for 1 hour in stable temperature, while afterwards a mixing with double recycling by swirl is caused to the mixture, i.e. by pumping it and reflowing it into the working tub. After the one-hour stirring, the alcohols are poured into the working tub in a content of 2% by weight, which have a stable content temperature of 40 °C. During the flowing of the alcohols into the working tub, the temperature is gradually reduced until it is stabilized at 40°C, so that the temperature of the mixture and the alcohols is equated. Afterwards, a stirring occurs, at the same time increasing the temperature until it reaches a temperature of 55°C and then,

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the essential oils (aromatizers) and the complex substances (oil, water, alcohol) are put which have a total content of 2% by weight. The stirring of the mixture is continued until it obtains an homogenous form while the pH is adjusted to 7 by adding reagents (acids or caustic soda) in the suitable quantity. The mixture is allowed to cool down by transusing it into a polyester or glass tank. Quality control of the final product follows.

The new composition that is produced according to the present invention, has various applications and usages in a wide field of the production of disinfectant and cleansing products as well as in the procedure of cleansing water of sewage, in agriculture, in the field of sanitation of public places, the disinfection of medical machines, the industry of fabric dyeing and several others, which all fall under the scope object and claims of the present invention.

1. The mixture is allowed to cool down by transfusing it into a polyester or glass tank and a quality control of the final product follows.
2. A chemical composition which is produced with the method of the claim (1), which includes
 - benzyl-dimethyl-dodecyl (lauryl) ammonium chloride and benzyl-dimethyl tetradecyl (myristyl) ammonium chloride in a content of 5% by weight.
 - water in a content of 91% by weight on the total of the mixture, enriched with metals and especially with iron
 - alcohols in a content of 2% by weight
 - aromatizers and compound materials in a content of 2% per weight.
3. A chemical composition according to the claims (1) and (2), which is used as a synergistic material in fabric dyeing procedures.
4. A chemical composition according to the claims (1) and (2), which is used as a synergistic material in the biological cleansing of water and sewage.
5. A chemical composition according to the claims (1) and (2), which is used as an augmentation means for the growth of plants and agricultures.
6. A chemical substance, according to the claims (1) and (2), which is used as a synergistic material in the cleansing of the atmospheric air.
7. A chemical substance according to the claims (1) and (2), which is used as an antifrictional material.

8. A chemical substance according to the claims (1) and (2), which is used as an antistatic means.
9. A chemical substance according to the claims (1) and (2), which is used as a means of infiltration
- 5 10. A chemical substance according to the claims (1) and (2), which is used as a disinfectant and cleansing means as well as in insecticidal formulations.

CLAIMS

1. Method of preparation of a chemical composition, which consists of quaternary ammonium salts benzyl-dimethyl (lauryl) ammonium chloride and
5 benzyl-dimethyl tetradecyl (myristyl) ammonium chloride in a content of 5% by weight in total and which is characterized by the following stages:

- quaternary salts are received, i.e. benzyl-dimethyl-dodecyl (lauryl) ammonium chloride and benzyl-dimethyl (myristyl) ammonium chloride in a quantity of 5% by weight in total and they are heated in a high and
10 stable temperature, i.e. 70°C for 6 hours in a water-bath.
- they are put into deionized water of 91% content by weight of the total mixture, which is enriched with metals, substantially with iron, in stable temperature of 55°C.
- a light stirring follows for 1 hour in stable temperature, while afterwards a
15 mixing with double recycling by swirl is caused to the mixture, i.e. by pumping it and reflowing it into the working tub,
- the alcohols are thrown into the working tub in a content of 2% per weight, which have a stable temperature of 40°C.
- while the temperature of the mixture is gradually reduced until it is
20 stabilized at 40°C, so that the temperature of the mixture and the alcohols is equated,
- a stirring occurs with an increase of the temperature until it reaches at 55°C and then, the essential oils (aromatizers) and the complex substances (oil, water, alcohol) are put which have a total content of 2%
25 by weight.
- the stirring of the mixture is continued until it obtains an homogeneous form while the pH is adjusted to 7 by adding reagents (acids or caustic soda) in the suitable quantity,
- the mixture is allowed to cool down by transfusing it into a polyester or
30 glass tank and a quality control of the final product follows.

2. A chemical composition which is produced with the method of the claim (1) which includes

- benzyl-dimethyl-dodecyl (lauryl) ammonium chloride and benzyl-dimethyl tetradecyl (myristyl) ammonium chloride in a content of 5% by weight

- water in a content of 91% by weight on the total of the mixture, enriched with metals and especially with iron
 - alcohols in a content of 2% by weight
 - aromatizers and compound materials in a content of 2% by weight.
- 5 3. A chemical composition according to the claims (1) and (2), which is used as a synergistic material in fabric dyeing procedures
 4. A chemical composition according to the claims (1) and (2), which is used as a synergistic material in the biological cleansing of water and sewage.
 5. A chemical composition according to the claims (1) and (2), which is used
10 as an augmentation means for the growth of plants and agricultures.
 6. A chemical composition according to the claims (1) and (2), which is used as a synergistic material in the cleansing of the atmospheric air.
 7. A chemical composition according to the claims (1) and (2), which is used as an antifrictional material.
 - 15 8. A chemical composition according to the claims (1) and (2), which is used as an antistatic means.
 9. A chemical composition according to the claims (1) and (2), which is used as means of infiltration.
 10. A chemical composition according to the claims (1) and (2), which is used
20 as a disinfectant and cleansing means as well as in insecticidal formulations .

INTERNATIONAL SEARCH REPORT

International Application No

PCT/GR 98/00004

A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 C07C211/63 C11D3/30 A01N33/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 6 C07C A01N C11D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	"The Merck Index" 1996, MERCK RESEARCH LABORATORIES WHITEHOUSE STATION, NJ (USA) XP002040849 see paragraph 1086 ---	1-10
A	"The Sigma Catalogue. Part B. Alphabetical List of Compounds" January 1997, SIGMA CHEMICAL COMPANY XP002040850 see page 176, right-hand column, line 33 - line 42 --- -/--	1-10



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

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Date of the actual completion of the international search

16 July 1998

Date of mailing of the international search report

29/07/1998

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INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
A	<p>DATABASE WPI Section Ch. Derwent Publications Ltd., London, GB; Class C01, AN 72-64239T XP002040851 & JP 47 019 039 A (NISHIMURA H) see abstract</p> <p style="text-align: center;">---</p>	1-10
A	<p>RICHARDS, R. M. E. ET AL: "Differences in antibacterial activity of benzalkonium chloride" J. PHARM. SCI. (1978), 67(3), 380-3 CODEN: JPMSAE;ISSN: 0022-3549. 1978, XP002071748 see page 380</p> <p style="text-align: center;">---</p>	1-10
A	<p>US 5 215 676 A (J.A. STONE) 1 June 1993 see claims</p> <p style="text-align: center;">---</p>	1-10
A	<p>GB 1 068 378 A (MICHIGAN TOOL COMPANY) 28 October 1964 see claims</p> <p style="text-align: center;">---</p>	1-10
A	<p>US 4 952 398 A (TAPIN JEAN) 28 August 1990 see claims</p> <p style="text-align: center;">---</p>	1-10
A	<p>DE 35 34 102 A (SANDOZ AG) 10 April 1986 see claims</p> <p style="text-align: center;">---</p>	1-10
A	<p>WO 93 21766 A (ETHYL CORP) 11 November 1993 see claims</p> <p style="text-align: center;">-----</p>	1-10

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Information on patent family members

International Application No

PCT/GR 98/00004

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 5215676 A	01-06-1993	NONE	
GB 1068378 A		NONE	
US 4952398 A	28-08-1990	NONE	
DE 3534102 A	10-04-1986	CH 666297 A	15-07-1988
		FR 2571392 A	11-04-1986
		GB 2165268 A, B	09-04-1986
		JP 61089382 A	07-05-1986
		US 4797131 A	10-01-1989
WO 9321766 A	11-11-1993	NONE	